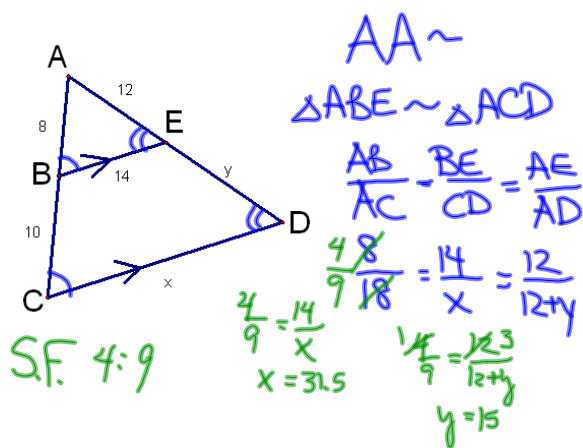
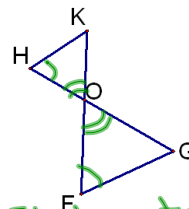
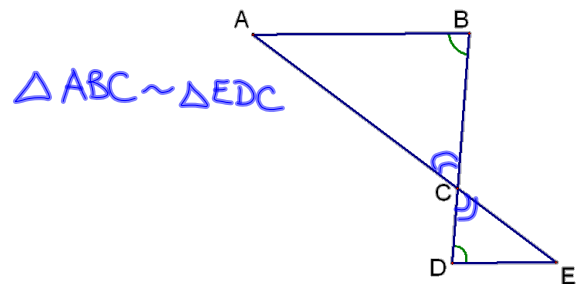


6-4 and 6-5 Prove Triangles Similar by AA~, SSS~, and SAS~



Postulate 22--Angle-Angle (AA~) Similarity
Postulate--If 2 angles of 1 triangle are
congruent to 2 angles of another triangle, then
the 2 triangles are similar.

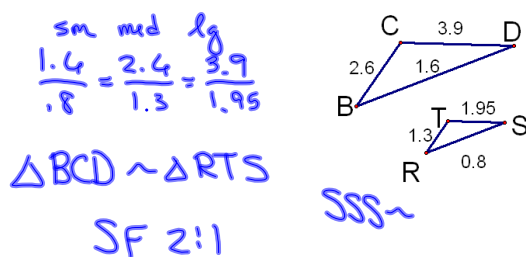


Given: $\angle H \cong \angle F$

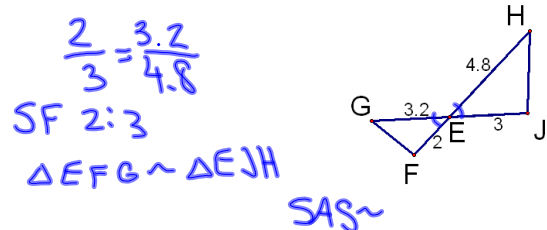
Prove: $HK \cdot GO = FG \cdot KO$

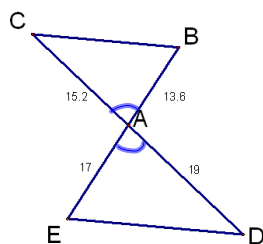
Statements	Reasons
① $\angle H \cong \angle F$	① Given
② $\angle HOG \cong \angle FOK$	② Vert \angle s \cong
③ $\triangle HOG \sim \triangle FOK$	③ AA~
④ $\frac{GO}{KO} = \frac{FG}{HK}$	④ Corr sides of ~ triangles are proportional
⑤ $HK \cdot GO = FG \cdot KO$	⑤ Cross Mult.

Theorem 6.2---SSS~ Theorem--If the corresponding side lengths of 2 triangles are proportional, then the triangles are similar.



Theorem 6.3--SAS~ Theorem--If an angle of 1 triangle is congruent to an angle of a second triangle, and the lengths of the sides including these angles are proportional, then the triangles are similar.



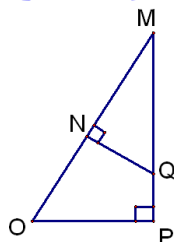


Are the triangles similar?

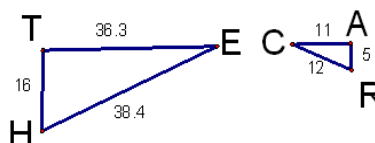
$$\frac{17}{13.6} = \frac{19}{15.2} \checkmark$$

Yes, SAS ~
 $\triangle ABC \sim \triangle AED$

Are the triangles similar?
 $AA \sim \triangle MNG \sim \triangle MPO$

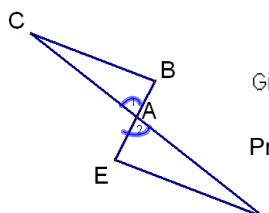


Are the triangles similar?



$$\frac{5}{16} = \frac{11}{36.3} = \frac{12}{38.4}$$

Not ~



Given: $\frac{AC}{AD} = \frac{BA}{EA}$

Prove: $\angle C \cong \angle D$

- | | |
|--|---|
| <p>S.</p> <ol style="list-style-type: none"> ① ~ ② $\angle 1 \cong \angle 2$ ③ $\triangle ABC \sim \triangle AED$ ④ $\angle C \cong \angle D$ | <p>R.</p> <ol style="list-style-type: none"> ① GM ② Vert \angles ③ SAS ~ ④ Corr angles of ~ are \cong |
|--|---|

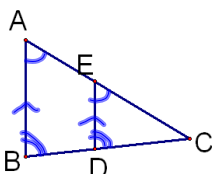
$$\frac{1.5}{242} = \frac{6}{x}$$

$x = 968 \text{ ft tall}$



Given: \overline{DE} is the midsegment of $\triangle ABC$
 Prove: $\triangle CDE \sim \triangle CBA$

- | | |
|---|---|
| <p>S.</p> <ol style="list-style-type: none"> ① ~ ② $\overline{DE} \parallel \overline{AB}$ ③ $\angle A \cong \angle DEC$
$\angle B \cong \angle CDE$ ④ $\triangle CDE \sim \triangle CBA$ | <p>R.</p> <ol style="list-style-type: none"> ① ② Midsegment thm ③ Corresponding \angles Post. ④ AA ~ |
|---|---|



HW

p384-385 #s 3-17, 21, 22, 25
 p392-394 #s 5-8, 33